In the first line of each of claims 17-29, delete "compound" and substitute --nucleoside-- therefor.

REMARKS

Claims 1-29 are pending in this patent application. Claim 16, which has been objected to, has been amended to recite "having the formula," as suggested in the Office Action.

Claims 1-29 stand rejected under 35 U.S.C. § 112, second paragraph, for alleged indefiniteness with regard to the recitation of "$-R_A-N(R_{1a})(R_{1b})$," "C(X)" and "C(O)". Applicants respectfully submit that the terms as written are easily understandable by those of ordinary skill in the art. For example, the formula $-R_A-N(R_{1a})(R_{1b})$ denotes a bivalent group $-R_A-$ which is chemically bound on one side to a 2'-O position, a 3'-O-position or a 5'-O-position, and on the other side to a nitrogen atom N which, in turn, is bound to two different groups: (R_{1a}) and (R_{1b}). The use of parentheses to indicate separate groups bound to nitrogen is routine in the art. With respect to the formulas C(X) and C(O), "X" is defined in the claims as O or S. Thus, inspection of the formula shows that the parenthetical O or S atom can only be bound to the preceding carbon via a double bond.

Claims 17-29 stand rejected for use of the term "compound." The claims have been amended to recite the term "nucleoside" in place of compound, as suggested in the Office

Action. Also, claims 1 and 16 have been emended to even more clearly define the invention by specifying use of pentofuranosyl sugars. Support for this amendment is provided in the specification at, for example, page 7, lines 17-22.

Claims 1-29 stand rejected, and the specification is objected to under 35 U.S.C. § 112, first paragraph, for alleged lack of enablement. The basis for this rejection appears to be the Examiner's view that the claimed compounds "must maintain their ability to hybridize to a complementary nucleic acid to have utility." (Office Action at pages 4-5). As best understood, the claims do not stand rejected because persons skilled in the art would not be able to make and use the claimed compounds, but because certain of these compounds, having been made and used, may not effectively hybridize. Applicants respectfully request reconsideration of this rejection. Even if it were true that certain of the claimed compounds do not effectively hybridize to nucleic acids, rejection under the first paragraph of § 112 would be improper because there exist numerous uses for the compounds that do not involve hybridization. Moreover, the possibility that certain of the claimed compounds may hybridize more effectively than others provides no basis for rejection under § 112.

The specification teaches that the claimed compounds have many uses. For example, the objects of the invention include providing compounds having improved transfer across

cellular membranes and providing intercalators, nucleic acid cleaving agents, cell surface phospholipids. (*see, e.g.*, Specification at page 5). Further objects include providing compounds that can be used for research on assay methods, and on the transfer and uptake of therapeutics. (*Id.*). As will be recognized, many of these uses do not require effective hybridization to a complementary nucleic acid strand. For example, there is not believed to be any requirement for hybridization in the transfer of materials across cellular membranes, and nucleic acid cleavage only requires chemical reaction between the cleaving agent and the nucleic acid. Thus, the mere possibility that certain claimed compounds may not effectively hybridize with nucleic acids provides an improper basis for concluding that the claims are not enabling. Indeed, the first paragraph of § 112 requires that the specification enable use of the invention, not that it enable each and every conceivable use.

Even if it were true that the only use for the claimed compounds involves hybridization to nucleic acids (and it is not), the mere fact that some of the compounds may hybridize more effectively than others is no grounds for rejection under § 112. Indeed, there is no requirement under § 112 that all claimed compounds possess the same degree of utility. *In re Gardner*, 177 U.S.P.Q. 396 (C.C.P.A. 1973). Accordingly, withdrawal of this rejection is requested.

Claims 1-4, 6-18 and 20-29 stand rejected under 35 U.S.C. § 102(b) as being anticipated by WO 92/05186 to Matteucci ("the Matteucci reference"). Applicants respectfully request reconsideration of this rejection. The Matteucci reference purports to disclose compounds having internucleosidic nitrogen-containing linkages, whereas the claimed compounds have nitrogen-containing substituents that clearly do not link nucleosides. The Matteucci reference discloses hypothetical internucleosidic linkages which span 5'- and 3'- positions of oligonucleosides. Indeed, the passages in the reference to which the Office Action refers (page 13, line 2 to page 20, line 30) provide a laundry list-like recitation of proposed embodiments for the linking moiety Q, which is defined as an internucleoside linkage. (*see*, paragraph spanning pages 12 and 13). By contrast, the substituent $-R_A-N(R_{1a})(R_{1b})$ in claims 1-4 and 6-15 cannot serve as an internucleoside linkage. Indeed, nitrogen substituents R_{1a} and R_{1b} are not defined to include (nor to be linked to) 3'- or 5'- nucleosidic moieties. Thus, the claimed compounds, which have nitrogen containing ***substituents***, are distinguishable from the compounds suggested by Matteucci, which have nitrogen-containing ***internucleosidic linkages***.

For the same reasons it can be seen that Matteucci does not teach with the monomeric nucleosides of claims 16-18 and 20-29. As discussed above, Matteucci suggests modified internucleoside linkages, which require a 3'-nucleoside at one

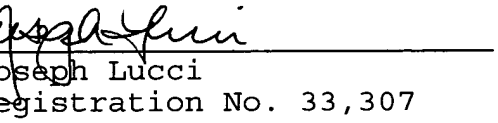
end of the Matteucci linkage and a 5'-nucleoside at the other end. The substituents of the present invention do not link nucleosides together, and thus Matteucci's suggested compounds cannot anticipate those of the present invention.

Claims 1-4, 6-18 and 20-29 stand rejected under 35 U.S.C. § 103 as being unpatentable over the Matteucci reference. The Office Action appears to assert that the recitation of a "reporter enzyme" in the present invention is obvious in view of Matteucci's teaching on page 24, lines 16-24 of detection of base complementarity via "radioactive, fluorescent or chromogenic labels." Applicants respectfully request reconsideration. The Office Action's assertion that the recitation of "reporter enzyme" is obvious seems to be ultimately based on the rejection under 35 U.S.C. § 102(b). However, as discussed above, the Matteucci disclosure does not anticipate the compounds of the present invention. Thus, whether the use of a reporter enzyme is or is not obvious in view of use of a radioactive, fluorescent or chromogenic label, there is in either case no basis for the Office Action's assertion that the claims of the present invention are obvious over the Matteucci reference.

Claims 5 and 19 stand rejected under 35 U.S.C. § 103 as being unpatentable over the Matteucci reference, and in further view of alleged admissions by Applicants. The Office Action asserts that the limitation in claims 5 and 19 reciting phthalimido protecting groups is obvious in view of the level of skill in the art. Applicants request reconsideration of the rejection for the reasons presented above in connection with the obviousness rejection of claims 1-4, 6-18 and 20-29. As discussed above, the Matteucci reference does not anticipate or render obvious claims independent claims 1 or 16, from which claims 5 and 19 respectively depend. Thus the further limitations present in claims 5 and 19 are not believed to render the claims obvious.

It is believed all of the claims presently before the Examiner patentably define the invention over the prior art and are otherwise in condition for ready allowance. An early Office Action to that effect is, therefore, earnestly solicited.

Respectfully submitted,



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